Pharmacogenomics summarized for prescribers in Medical Genetics Summaries (MGS)

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8600 Rockville Pike, Bethesda MD, 20894 USA

Malheiro A.J., Dean L.C., Hoeppner M.A., and Kattman B.L.

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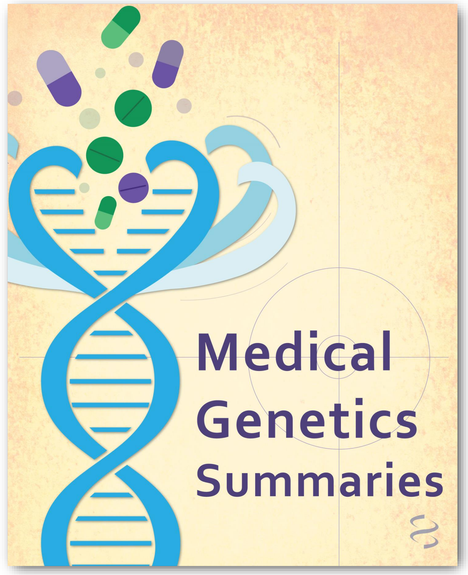
Introduction

Medical Genetics Summaries (MGS; http://go.usa.gov/xVEhN /) helps prescribers use pharmacogenomic knowledge.

MGS is currently home to 48 summaries that each focus on one drug, and the genetic variant(s) that influence the drug's safety and efficacy.



MGS summarizes the medical literature and centralizes dosing guidelines by linking to the guidance from the FDA, CPIC, DPWG, and other national and international professional and medical societies.

And the summaries are peer reviewed by clinical specialists and pharmacogenetic experts from around the world.

100 International MGS Reviewers

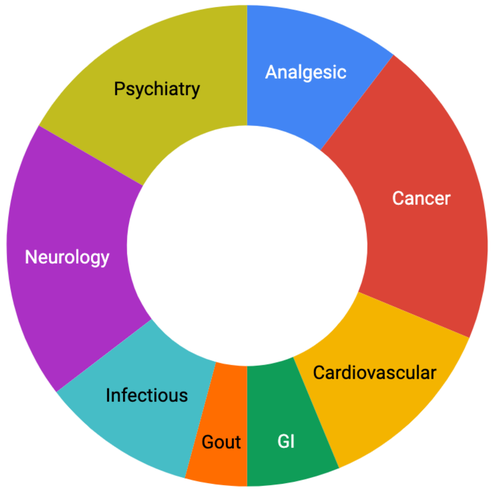
MGS includes drugs from different medical specialities

MGS prioritizes newly licensed drugs, and drugs that are commonly prescribed today. Each summary discusses how the drug is used (FDA indications and off-label uses), the drug class; mechanism of action; and the drug's efficacy and safety.

Summaries for clopidogrel and warfarin explain how genetic variants influence drug levels and as a consequence, drug efficacy and side effects.

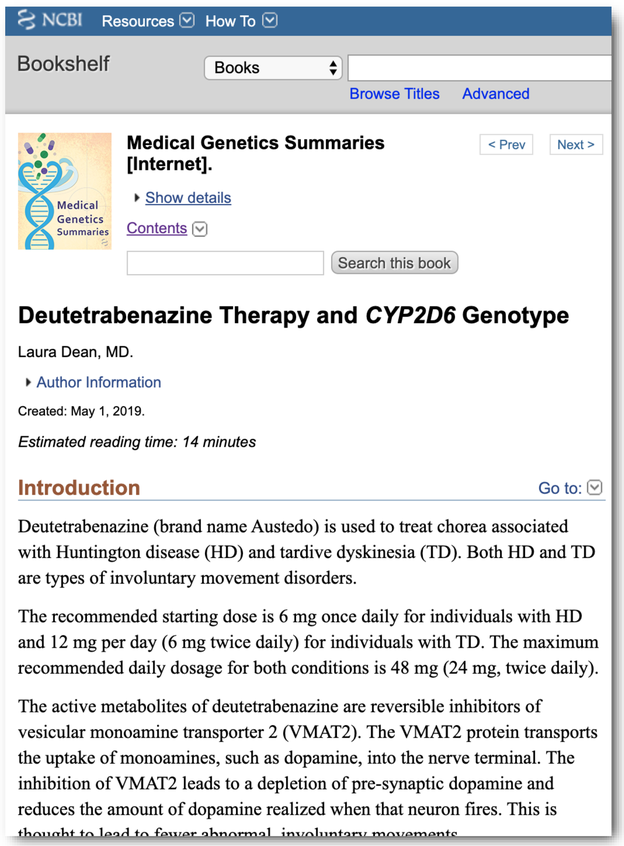
For allopurinol, carbamazepine, and phenytoin, MGS describes how genetic variants influence the risk of developing a severe and potentially fatal, idiosyncratic hypersensitivity reaction.

And for dabrafenib, pertuzumab, and vemurafenib, MGS describes how genetic variants in tumor specimens guides the choice of therapy.



GI: Gastrointestinal

MGS is designed to be useful in the clinic



MGS prioritizes the display of data that supports medical decision-making.

To be actionable, dosing recommendations based on genotype from authoritative sources

- For quick viewing, recommendations are displayed in tables at the top of the summary
- Standardized
- Regularly updated

To educate, new developments, such as activity scores for new genes, are explained, and translated into phenotypic impact.

To facilitate the adoption of pharmacogenetic testing into clinical practice, each summary links to the relevant and orderable genetic tests, for the gene or the drug response, at the NIH Genetic Testing Registry (GTR).

To help interpret genetic test results, the Genetic Testing section facilitates understanding of the genetic testing strategy and result interpretation. And the MGS Nomenclature Table links the allele terms commonly used in the medical literature with HGVS terms, and aids discovery by linking to ClinVar and dbSNP.

Genetic Testing Registry (GTR)

Find orderable clinical and research genetic tests by drug response(s), gene(s), test name https://www.ncbi.nlm.nih.gov/gtr/

Conclusion

MGS can be your starting point for pharmacogenetics because you can access all authoritative sources.

The FDA currently lists 270 therapeutic products with pharmacogenomic information in the drug labelling. However, the adoption of personalized prescribing based on genotype has been slow.

MGS and GTR are part of the NIH's effort to streamline this process, so that personalized medicine is part of routine clinical practice.

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Contact us

Meet us at Booth #214

Email: mgs@ncbi.nlm.nih.gov

ncbi.nlm @ncbi_clinical NCBI linkd.in/1gizCtx